APPENDIX A.   GLOSSARY OF TERMS AND DEFINITIONS

Glossary of Terms and Definitions

Some of the more common mining terms used in the report are defined below:-

Angle of draw	The angle of inclination from the vertical of the line connecting the goaf edge of the workings and the limit of subsidence (which is usually taken as 20 mm of subsidence).
Chain pillar	A block of coal left unmined between the longwall extraction panels.
Cover depth (H)	The depth from the surface to the top of the seam. Cover depth is normally provided as an average over the area of the panel.
Closure	The reduction in the horizontal distance between the valley sides. The magnitude of closure, which is typically expressed in the units of *millimetres (mm)*, is the greatest reduction in distance between any two points on the opposing valley sides. It should be noted that the observed closure movement across a valley is the total movement resulting from various mechanisms, including conventional mining induced movements, valley closure movements, far-field effects, downhill movements and other possible strata mechanisms.
Critical area	The area of extraction at which the maximum possible subsidence of one point on the surface occurs.
Curvature	The change in tilt between two adjacent sections of the tilt profile divided by the average horizontal length of those sections, i.e. curvature is the second derivative of subsidence. Curvature is usually expressed as the inverse of the **Radius of Curvature** with the units of *1/kilometres (km-1)*, but the value of curvature can be inverted, if required, to obtain the radius of curvature, which is usually expressed in *kilometres (km)*. Curvature can be either **hogging** (i.e. convex) or **sagging** (i.e. concave).
Extracted seam	The thickness of coal that is extracted. The extracted seam thickness is thickness normally given as an average over the area of the panel.
Effective extracted seam thickness (T)	The extracted seam thickness modified to account for the percentage of coal left as pillars within the panel.
Face length	The width of the coalface measured across the longwall panel.
Far-field movements	The measured horizontal movements at pegs that are located beyond the longwall panel edges and over solid unmined coal areas. Far-field horizontal movements tend to be bodily movements towards the extracted goaf area and are accompanied by very low levels of strain.
Goaf	The void created by the extraction of the coal into which the immediate roof layers collapse.
Goaf end factor	A factor applied to reduce the predicted incremental subsidence at points lying close to the commencing or finishing ribs of a panel.
Horizontal displacement	The horizontal movement of a point on the surface of the ground as it settles above an extracted panel.
Inflection point	The point on the subsidence profile where the profile changes from a convex curvature to a concave curvature. At this point the strain changes sign and subsidence is approximately one half of S max.
Incremental subsidence	The difference between the subsidence at a point before and after a panel is mined. It is therefore the additional subsidence at a point resulting from the excavation of a panel.
Panel	The plan area of coal extraction.
Panel length (L)	The longitudinal distance along a panel measured in the direction of (mining from the commencing rib to the finishing rib.
Panel width (Wv)	The transverse distance across a panel, usually equal to the face length plus the widths of the roadways on each side.
Panel centre line	An imaginary line drawn down the middle of the panel.
Pillar	A block of coal left unmined.
Pillar width (Wpi)	The shortest dimension of a pillar measured from the vertical edges of the coal pillar, i.e. from rib to rib.

msec

Shear deformations	The horizontal displacements that are measured across monitoring lines and these can be described by various parameters including; horizontal tilt, horizontal curvature, mid-ordinate deviation, angular distortion and shear index.
Strain	The change in the horizontal distance between two points divided by the original horizontal distance between the points, i.e. strain is the relative differential displacement of the ground along or across a subsidence monitoring line. Strain is dimensionless and can be expressed as a decimal, a percentage or in parts per notation.
	Tensile Strains are measured where the distance between two points or survey pegs increases and **Compressive Strains** where the distance between two points decreases. Whilst mining induced **strains** are measured **along** monitoring lines, ground **shearing** can occur both vertically, and horizontally **across** the directions of the monitoring lines.
Sub-critical area	An area of panel smaller than the critical area.
Subsidence	The vertical movement of a point on the surface of the ground as it settles above an extracted panel, but, 'subsidence of the ground' in some references can include both a vertical and horizontal movement component. The vertical component of subsidence is measured by determining the change in surface level of a peg that is fixed in the ground before mining commenced and this vertical subsidence is usually expressed in units of *millimetres (mm)*. Sometimes the horizontal component of a peg's movement is not measured, but in these cases, the horizontal distances between a particular peg and the adjacent pegs are measured.
Subsidence Effects	The deformations of the ground mass surrounding a mine, sometimes referred to as 'components' or 'parameters' of mine subsidence induced ground movements, including vertical and horizontal displacements, tilts, curvatures, strains, upsidence and closure.
Subsidence Impacts	The physical changes or damage to the fabric or structure of the ground, its surface and natural features, or built structures that are caused by the subsidence effects. These impacts considerations can include tensile and shear cracking of the rock mass, localised buckling of strata, bed separation, rock falls, collapse of overhangs, failure of pillars, failure of pillar floors, dilation, slumping and also include subsidence depressions or troughs.
Subsidence Consequences	The knock-on results of subsidence impacts, i.e. any change in the amenity or function of a natural feature or built structure that arises from subsidence impacts. Consequence considerations include public safety, loss of flows, reduction in water quality, damage to artwork, flooding, draining of aquifers, the environment, community, land use, loss of profits, surface improvements and infrastructure. Consequences related to natural features are referred to as environmental consequences.
Super-critical area	An area of panel greater than the critical area.
Tilt	The change in the slope of the ground as a result of differential subsidence, and is calculated as the change in subsidence between two points divided by the horizontal distance between those points. Tilt is, therefore, the first derivative of the subsidence profile. Tilt is usually expressed in units of *millimetres per metre (mm/m)*. A tilt of 1 mm/m is equivalent to a change in grade of 0.1 %, or 1 in 1000.
Uplift	An increase in the level of a point relative to its original position.
Upsidence	Upsidence results from the dilation or buckling of near surface strata at or near the base of the valley. The term uplift is used for the cases where the ground level is raised above the pre-mining level, i.e. when the upsidence is greater than the subsidence. The magnitude of upsidence, which is typically expressed in the units of *millimetres (mm)*, is the difference between the observed subsidence profile within the valley and the conventional subsidence profile which would have otherwise been expected in flat terrain.
Void Length	The extracted length of the longwall or panel.

APPENDIX B.   REFERENCES

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APPENDIX C. FIGURES

Predicted Profiles of Conventional Subsidence, Tilt and Curvature along Prediction Line 1 Resulting from Mining in the Upper Donaldson Seam
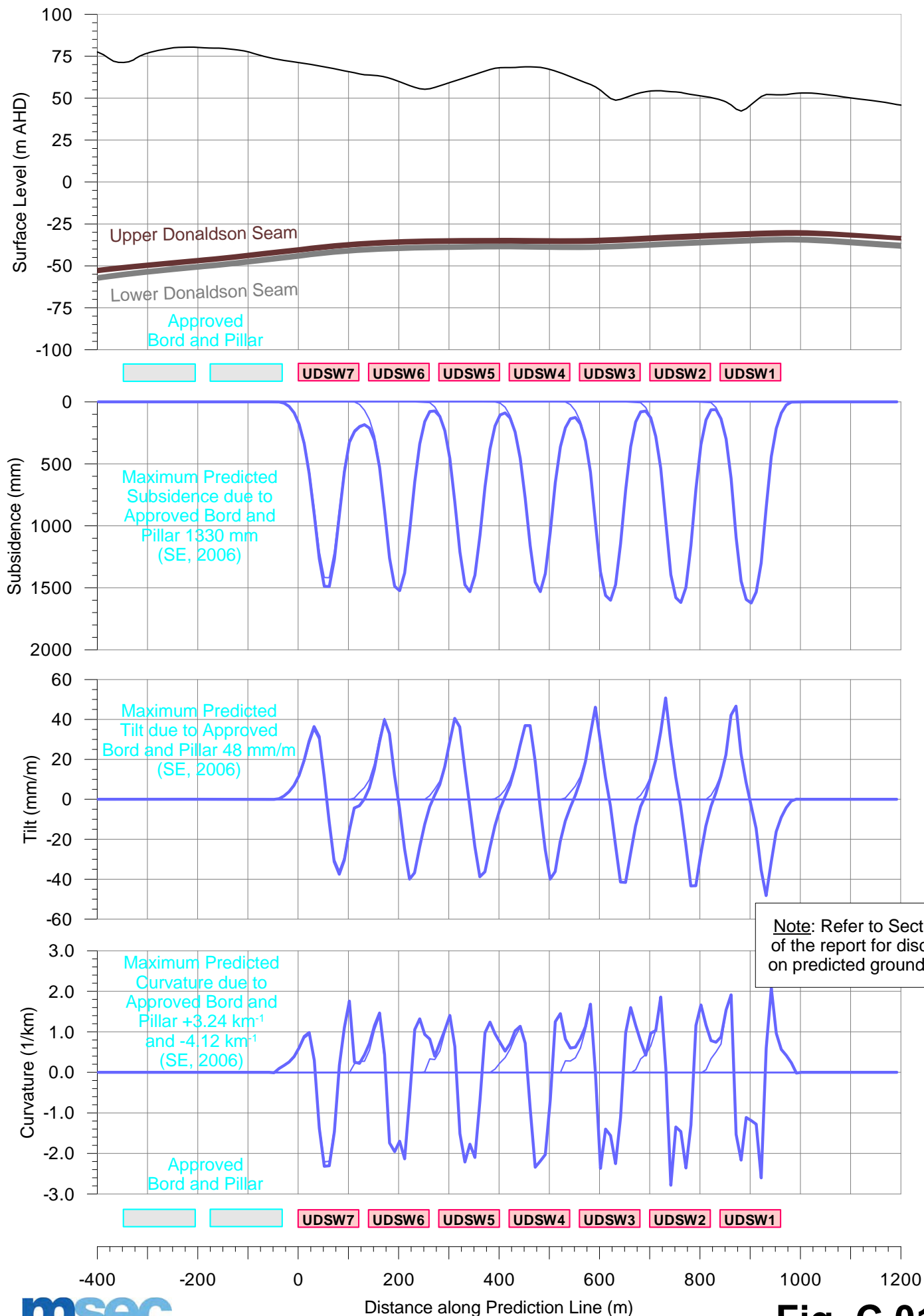
Note: Refer to Section 4.4 of the report for discussion on predicted ground strains

Fig. C.01

Predicted Profiles of Conventional Subsidence, Tilt and Curvature along Prediction Line 2 Resulting from Mining in the Upper and Lower Donaldson Seams
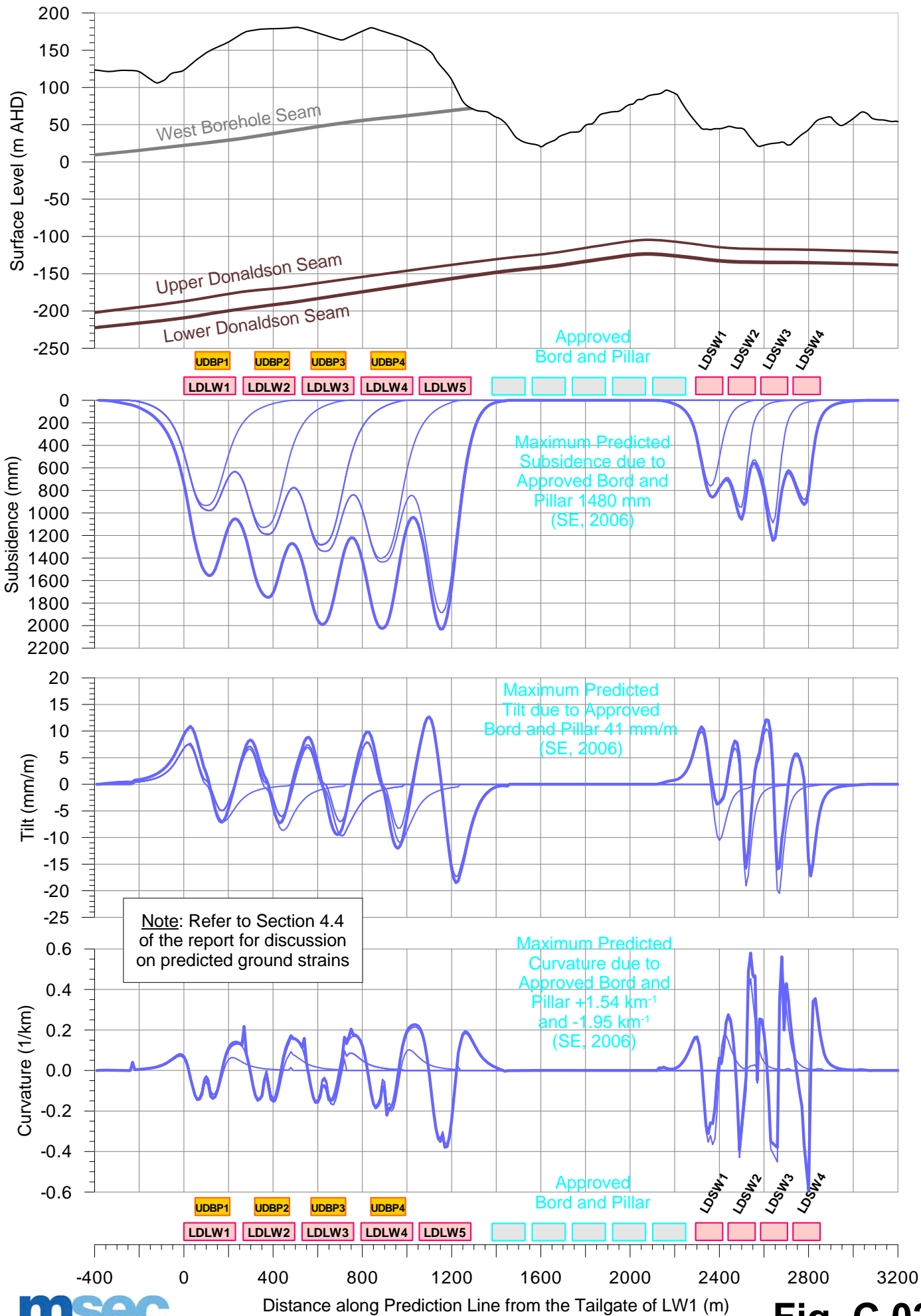
Fig. C.02

Predicted Profiles of Conventional Subsidence, Tilt Along and Tilt Across the Alignment of the 330kV Transmission Line
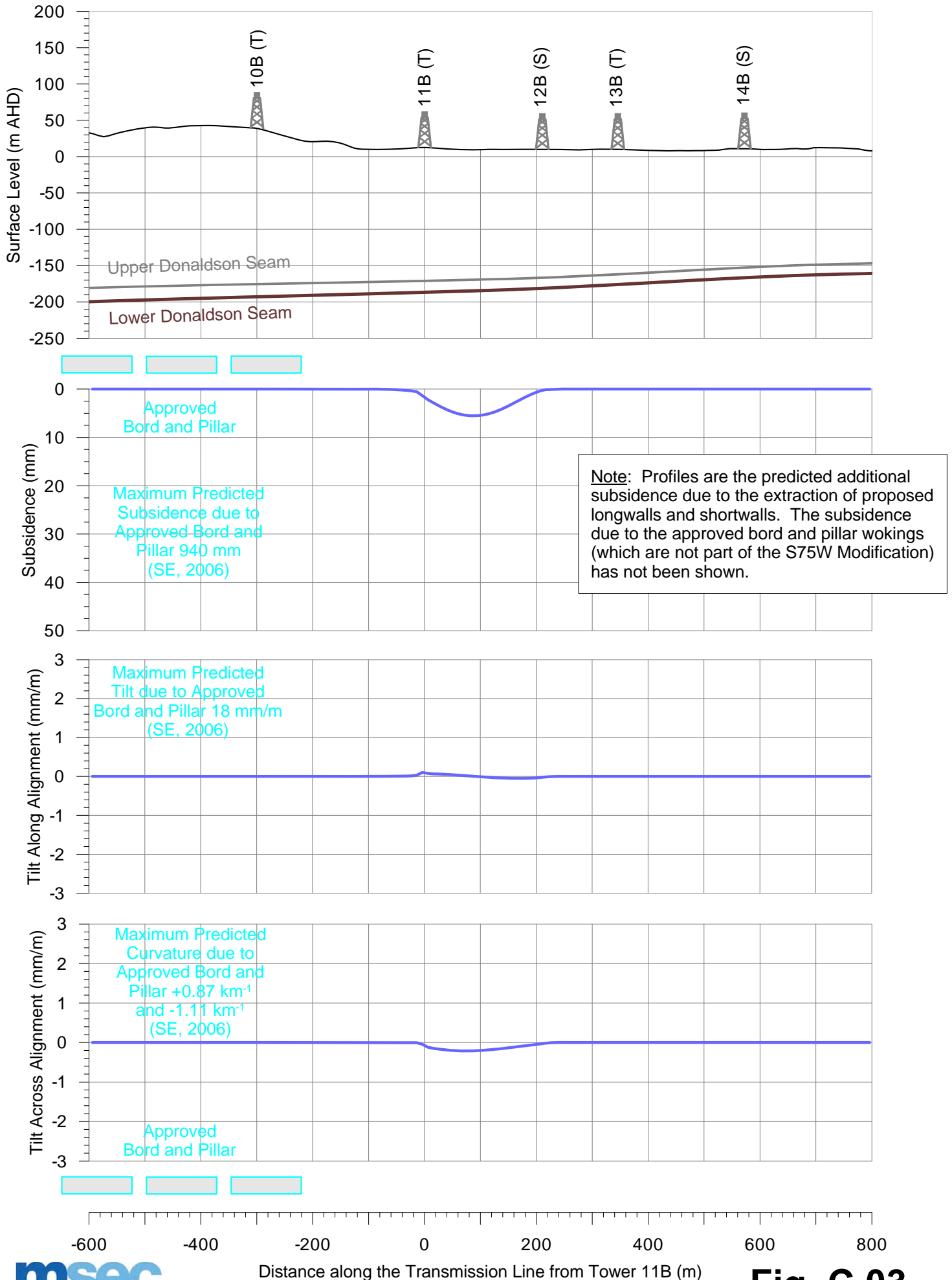
Note: Profiles are the predicted additional subsidence due to the extraction of proposed longwalls and shortwalls. The subsidence due to the approved bord and pillar wokings (which are not part of the S75W Modification) has not been shown.

Fig. C.03

Predicted Profiles of Conventional Subsidence, Tilt Along and Tilt Across the Alignment of the 132kV Powerline

Note: Refer to Section 4.4 of the report for discussion on predicted ground strains

Maximum Predicted Subsidence due to Approved Bord and Pillar 1220 mm (SE, 2006)

Maximum Predicted Tilt due to Approved Bord and Pillar 27 mm/m (SE, 2006)

Note: Profiles are the predicted additional movements due to the extraction of proposed shortwalls. The movements due to the approved bord and pillar wokings (which are not part of the S75W Modification) has not been shown.

Maximum Predicted Curvature due to Approved Bord and Pillar +1.14 km^{-1} and -1.44 km^{-1} (SE, 2006)

Approved Bord and Pillar

Upper Donaldson Seam

Lower Donaldson Seam

LDSW3   LDSW4

Distance along the Powerline from the Maingate if LDSW3 (m)

Fig. C.04

Predicted Profiles of Conventional Subsidence, Tilt and Curvature along the Alignment of the Telstra Optical Fibre Cable

Note: Refer to Section 4.4 of the report for discussion on predicted ground strains

Distance along the Optical Fibre Cable from the Tailgate of UDSW1 (m)

msec

Fig. C.05

APPENDIX D.   DRAWINGS

UPPER DONALDSON

NOT PART OF S75W
MODIFICATION

STUDY AREA

UDSW1
UDSW2
UDSW3
UDSW4
UDSW5
UDSW6
UDSW7

ML 1618

PANEL 1 CROSSLINE

PANEL 1 CENTRELINE

NOT PART OF S75W
MODIFICATION

STUDY AREA

LDSW1
LDSW2
LDSW3
LDSW4

LOWER DONALDSON

NOT PART
OF S75W
MODIFICATION

STUDY AREA

LDLW1
LDLW2
LDLW3
LDLW5
LDLW4

UDBP1
UDBP2
UDBP3
UDBP4

ADDITIONAL THIN SEAM
FIRST WORKINGS IN UPPER
DONALDSON SEAM

NOT PART OF S75W
MODIFICATION

ML 1848

SYDNEY NEWCASTLE FREEWAY

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6 368 000
6 367 000
6 366 000
6 365 000
6 364 000
6 363 000
6 362 000
6 361 000
6 360 000

366 000
367 000
368 000
369 000
370 000
371 000

Grid to MGA co-ordinates

msec
mine subsidence
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DONALDSON COAL

ABEL UPGRADE MODIFICATION
GENERAL LAYOUT

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10-Aug-2012	1:35000	MSEC492-01	B

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6 368 000

**SHORTWALLS IN
UPPER DONALDSON SEAM**

NOT PART OF S75W
MODIFICATION

6 367 000

STUDY AREA

NOT PART OF S75W
MODIFICATION

6 366 000

CROSS SECTION - A

UDSW7
UDSW6
UDSW5
UDSW4
UDSW3
UDSW2
UDSW1

6 365 000

STUDY AREA

NOT PART
OF S75W
MODIFICATION

6 364 000

STUDY AREA

ADDITIONAL THIN SEAM
FIRST WORKINGS IN UPPER
DONALDSON SEAM

CROSS SECTION - B

UDBP1
UDBP2
UDBP3
UDBP4

6 363 000

EXTENT OF THIN SEAM
PILLAR EXTRACTION
(ie SECOND WORKINGS)
IN UPPER DONALDSON SEAM

NOT PART OF S75W
MODIFICATION

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Grid to MGA co-ordinates

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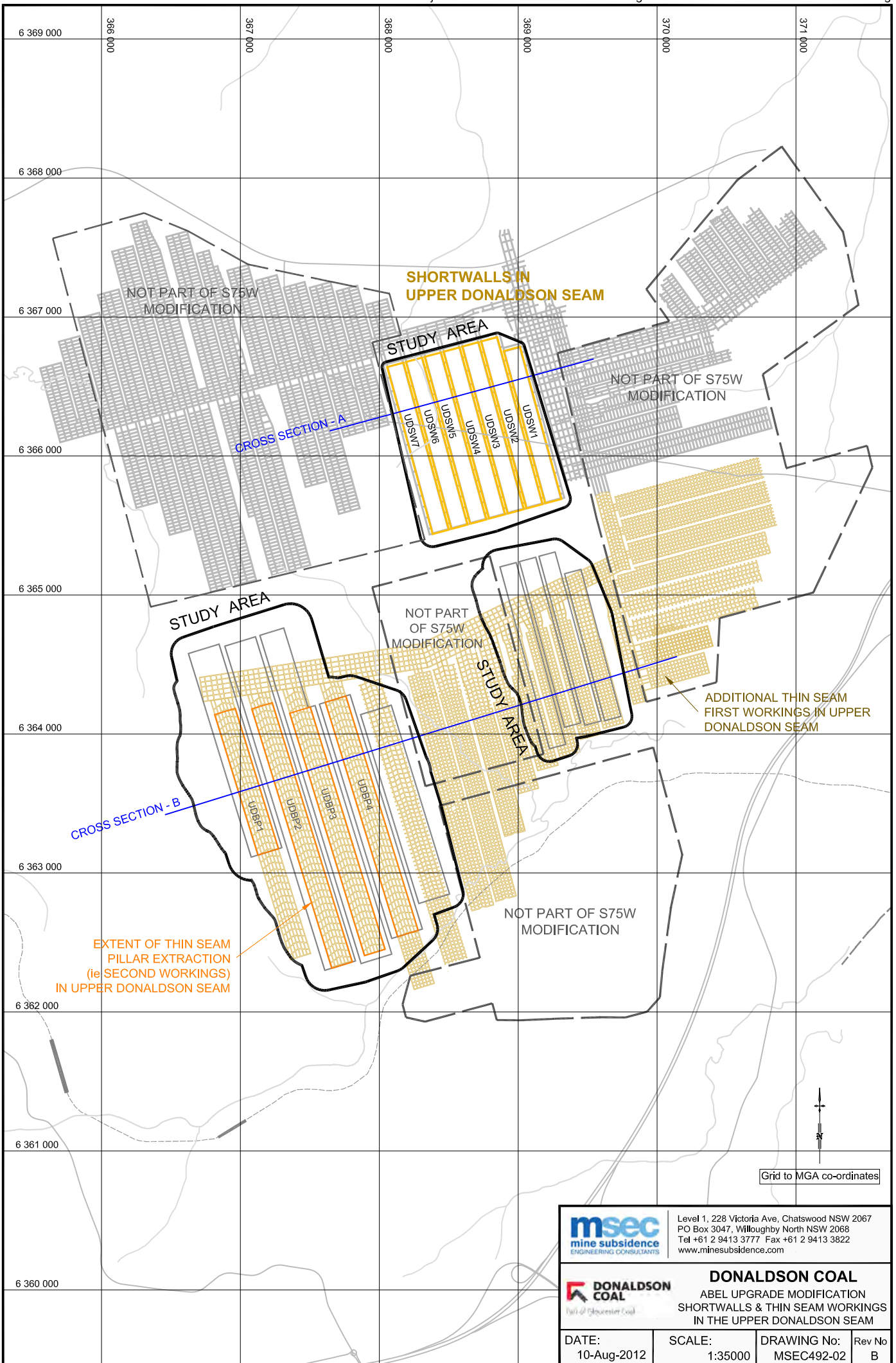6 360 000

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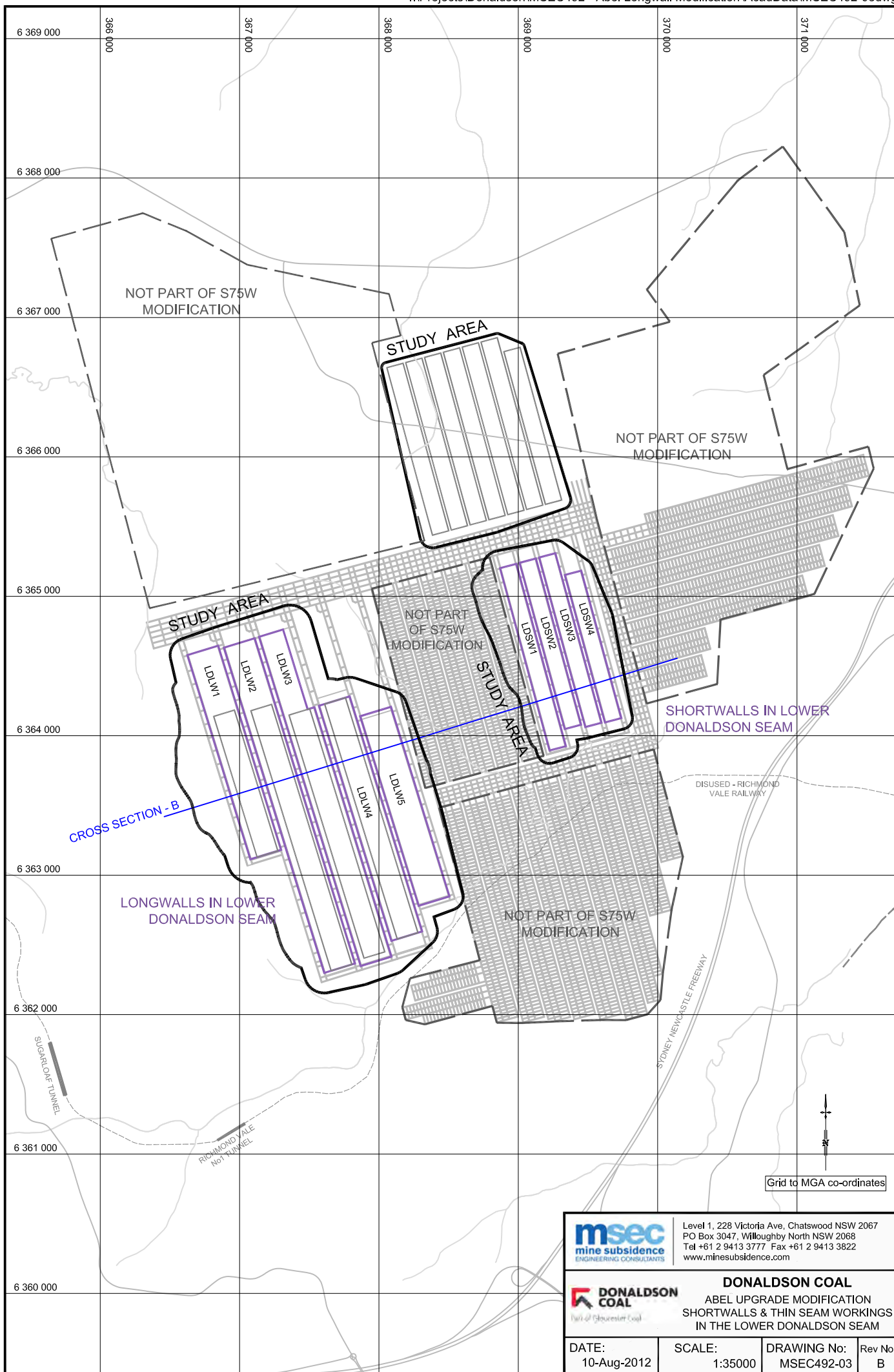ENGINEERING CONSULTANTS
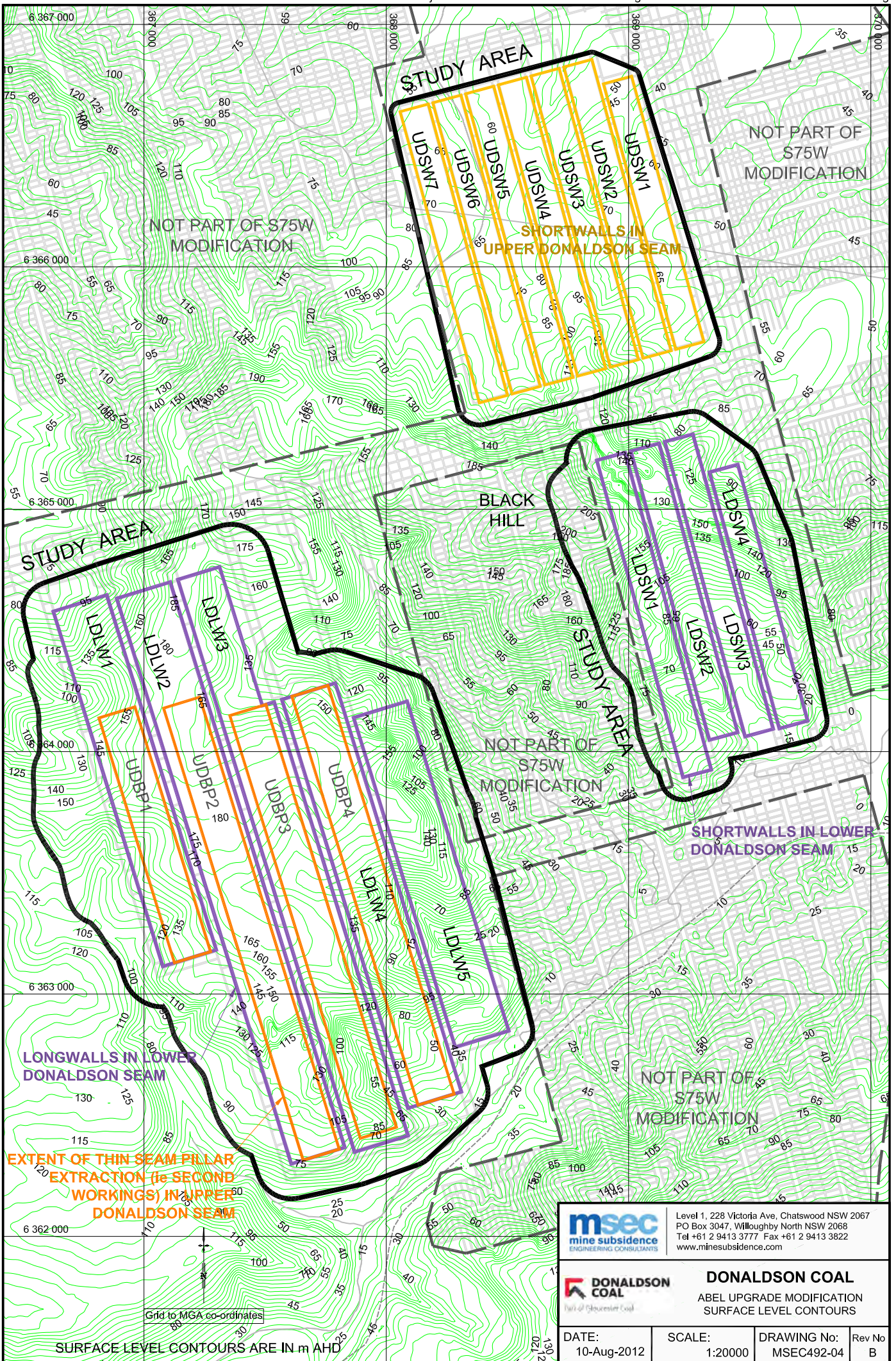
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ABEL UPGRADE MODIFICATION
SHORTWALLS & THIN SEAM WORKINGS
IN THE UPPER DONALDSON SEAM

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NOT PART OF S75W
MODIFICATION

6 367 000

STUDY AREA

6 366 000

NOT PART OF S75W
MODIFICATION

6 365 000

STUDY AREA

NOT PART
OF S75W
MODIFICATION

STUDY AREA

LDSW1
LDSW2
LDSW3
LDSW4

LDLW1
LDLW2
LDLW3

6 364 000

SHORTWALLS IN LOWER
DONALDSON SEAM

CROSS SECTION - B

LDLW4
LDLW5

DISUSED - RICHMOND
VALE RAILWAY

6 363 000

LONGWALLS IN LOWER
DONALDSON SEAM

NOT PART OF S75W
MODIFICATION

SYDNEY NEWCASTLE FREEWAY

6 362 000

SUGARLOAF TUNNEL

6 361 000

RICHMOND VALE
No1 TUNNEL

N

Grid to MGA co-ordinates

DONALDSON COAL

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COAL
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ABEL UPGRADE MODIFICATION
SHORTWALLS & THIN SEAM WORKINGS
IN THE LOWER DONALDSON SEAM

| DATE: 10-Aug-2012 | SCALE: 1:35000 | DRAWING No: MSEC492-03 | Rev No B |

STUDY AREA

UDSW7 UDSW6 UDSW5 UDSW4 UDSW3 UDSW2 UDSW1

SHORTWALLS IN UPPER DONALDSON SEAM

NOT PART OF S75W MODIFICATION

NOT PART OF S75W MODIFICATION

BLACK HILL

LDSW1 LDSW2 LDSW3 LDSW4

STUDY AREA

STUDY AREA

LDLW1 LDLW2 LDLW3

UDBP1 UDBP2 UDBP3 UDBP4

LDLW4 LDLW5

NOT PART OF S75W MODIFICATION

SHORTWALLS IN LOWER DONALDSON SEAM

LONGWALLS IN LOWER DONALDSON SEAM

EXTENT OF THIN SEAM PILLAR EXTRACTION (ie SECOND WORKINGS) IN UPPER DONALDSON SEAM

NOT PART OF S75W MODIFICATION

Grid to MGA co-ordinates

SURFACE LEVEL CONTOURS ARE IN m AHD

6 367 000
6 366 000
6 365 000
6 364 000
6 363 000
6 362 000

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SURFACE LEVEL CONTOURS

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STUDY AREA

NOT PART OF
S75W
MODIFICATION

NOT PART OF S75W
MODIFICATION

UDSW7
UDSW6
UDSW5
UDSW4
UDSW3
UDSW2
UDSW1

6 367 000

6 366 000

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STUDY AREA

NOT PART OF
S75W
MODIFICATION

STUDY AREA

UDBP1
UDBP2
UDBP3
UDBP4

6 364 000

6 363 000

NOT PART OF
S75W
MODIFICATION

SEAM FLOOR CONTOURS ARE IN m AHD

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Grid to MGA co-ordinates
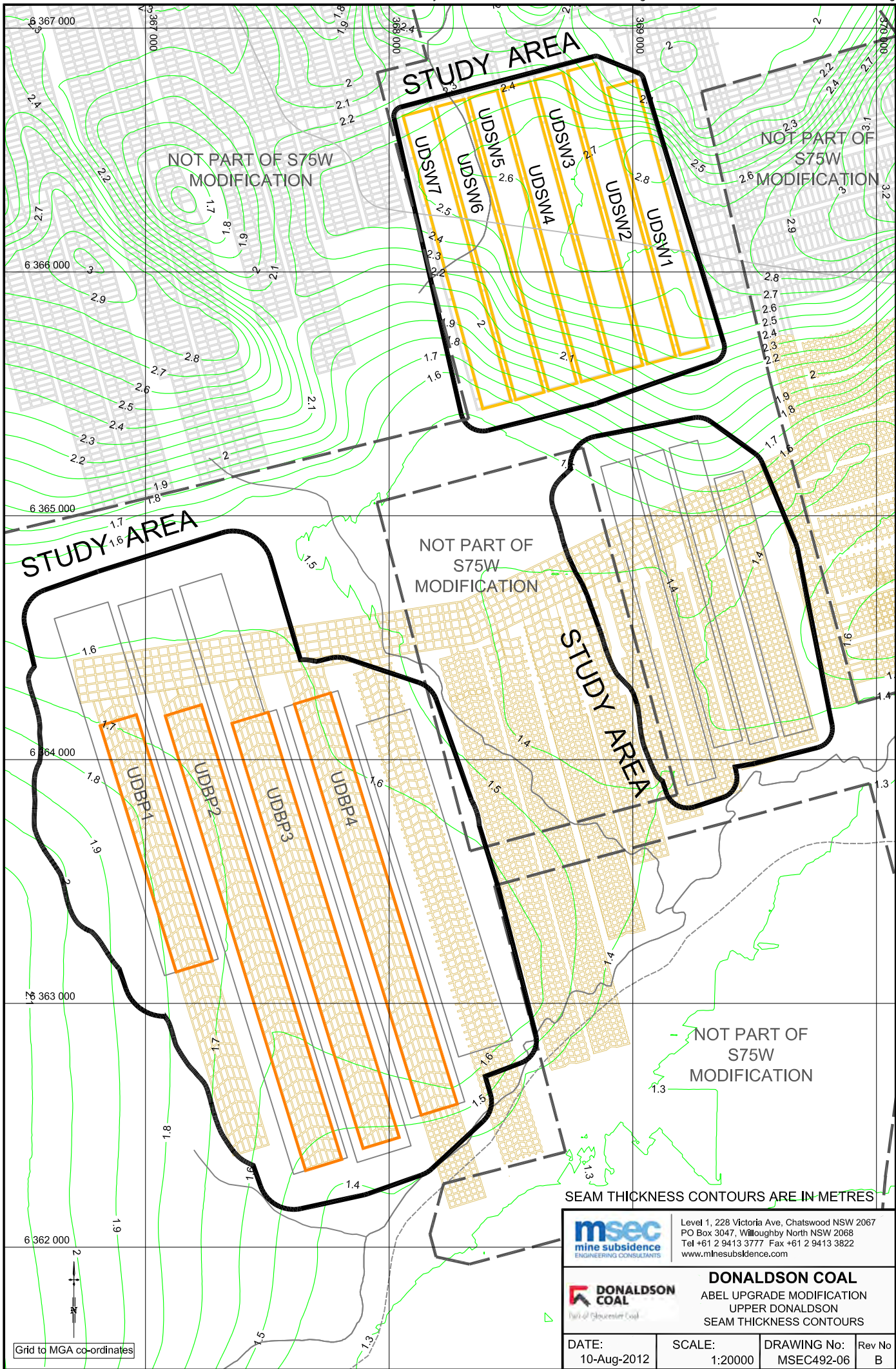
msec
mine subsidence
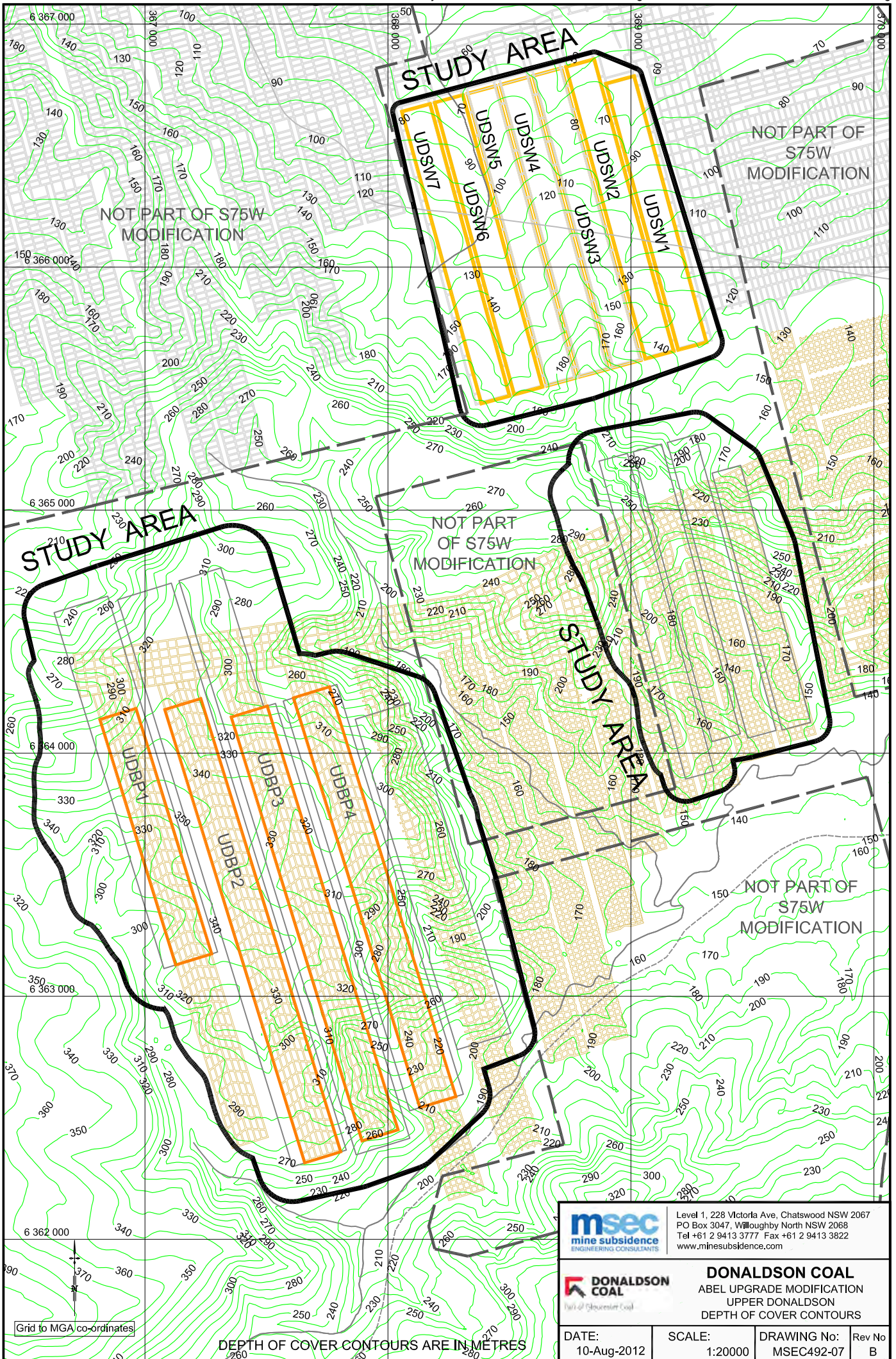ENGINEERING CONSULTANTS

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ABEL UPGRADE MODIFICATION
UPPER DONALDSON
SEAM FLOOR CONTOURS

DATE:	SCALE:	DRAWING No:	Rev No
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SEAM THICKNESS CONTOURS ARE IN METRES

Grid to MGA co-ordinates

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UPPER DONALDSON
SEAM THICKNESS CONTOURS

DONALDSON COAL
Part of Gloucester Coal

| DATE: 10-Aug-2012 | SCALE: 1:20000 | DRAWING No: MSEC492-06 | Rev No B |

DEPTH OF COVER CONTOURS ARE IN METRES

DONALDSON COAL
ABEL UPGRADE MODIFICATION
UPPER DONALDSON
DEPTH OF COVER CONTOURS

DATE:	SCALE:	DRAWING No:	Rev No
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Grid to MGA co-ordinates

SEAM FLOOR CONTOURS ARE IN m AHD

Grid to MGA co-ordinates

msec
mine subsidence
ENGINEERING CONSULTANTS

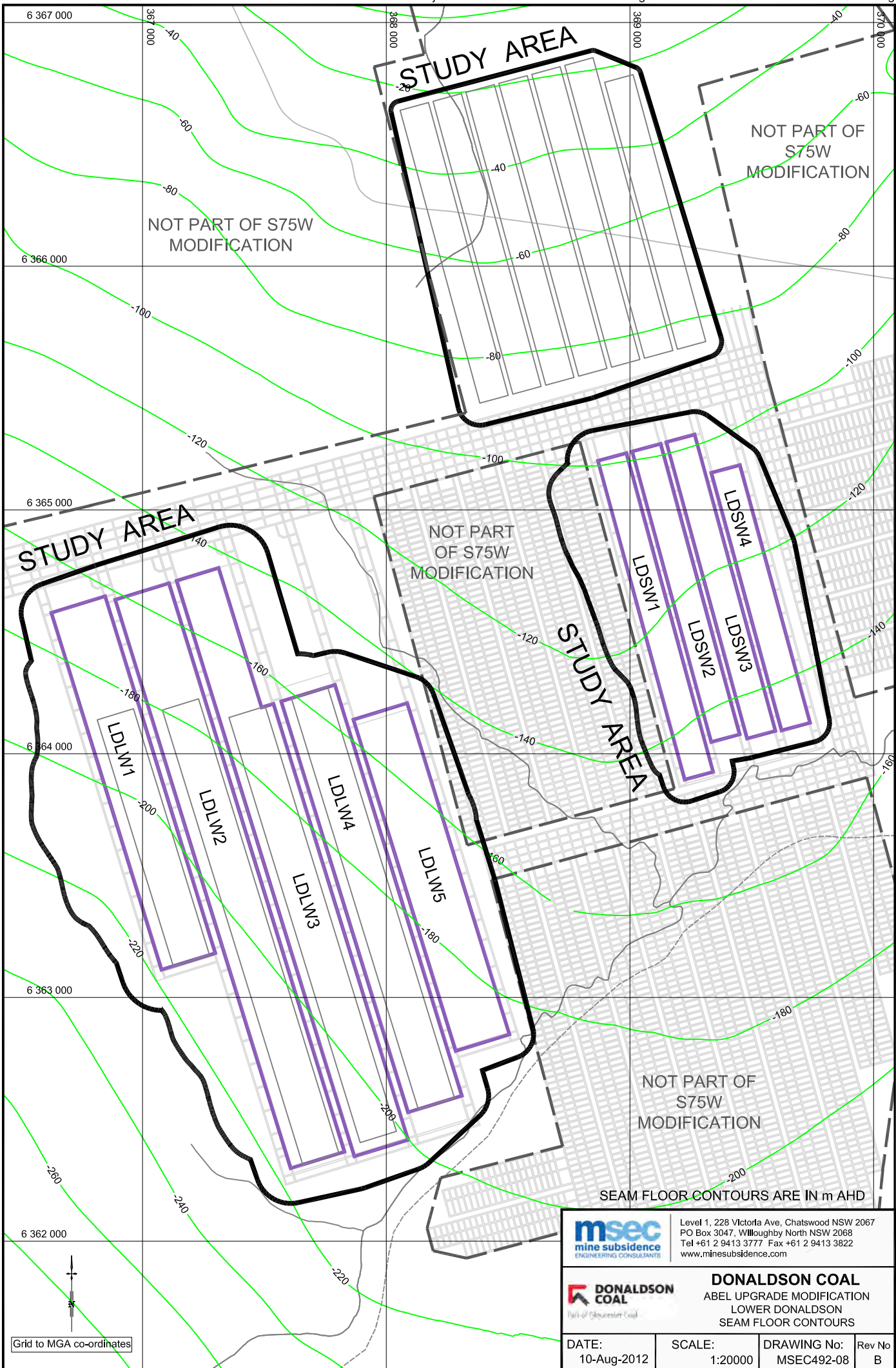Level 1, 228 Victoria Ave, Chatswood NSW 2067
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DONALDSON COAL
ABEL UPGRADE MODIFICATION
LOWER DONALDSON
SEAM FLOOR CONTOURS

DONALDSON COAL
Part of Gloucester Coal

DATE:	SCALE:	DRAWING No:	Rev No
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SEAM THICKNESS CONTOURS ARE IN METRES

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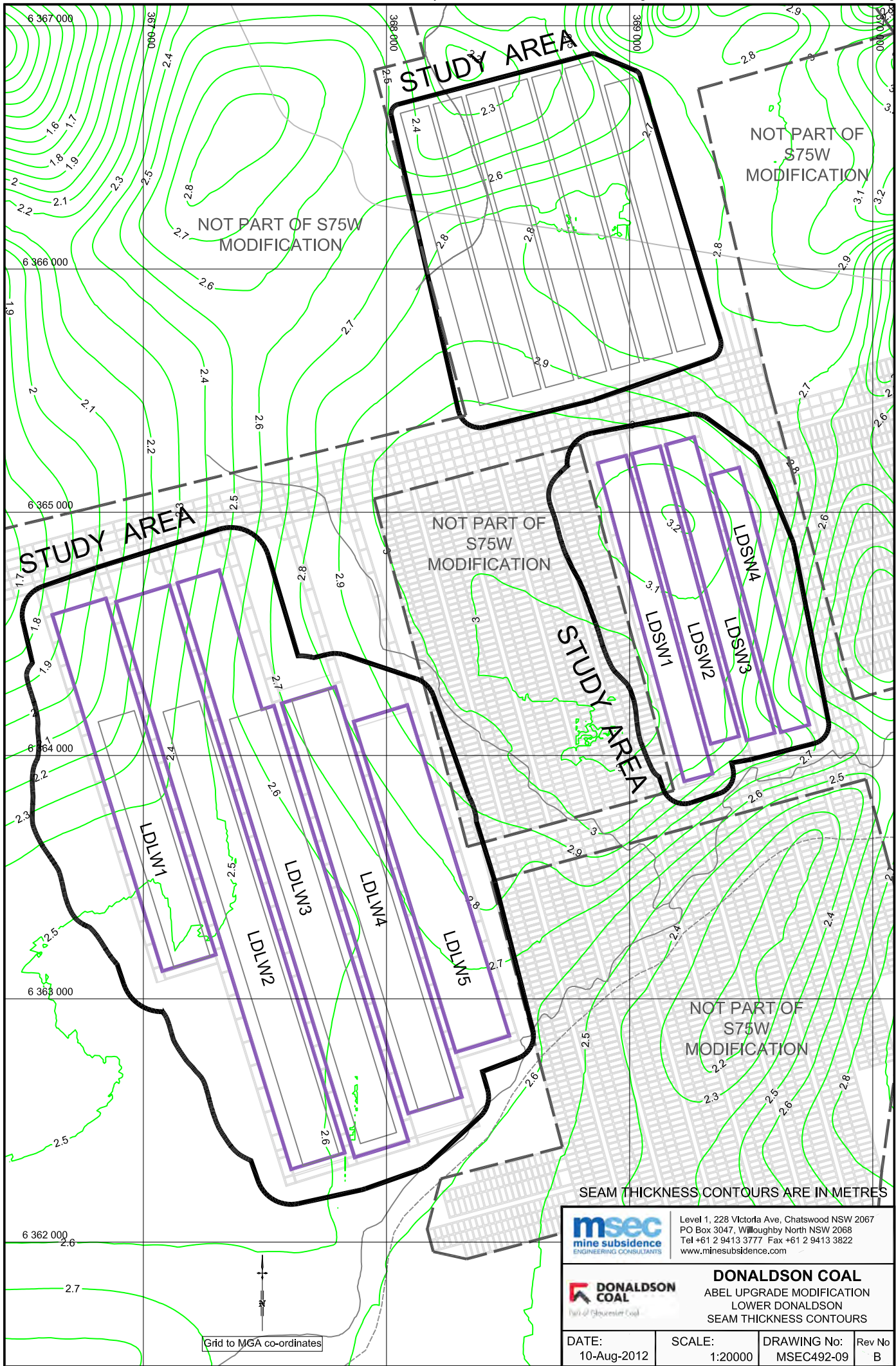
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DONALDSON
COAL
Part of Gloucester Coal

DONALDSON COAL
ABEL UPGRADE MODIFICATION
LOWER DONALDSON
SEAM THICKNESS CONTOURS

DATE:	SCALE:	DRAWING No:	Rev No
10-Aug-2012	1:20000	MSEC492-09	B

STUDY AREA

NOT PART OF S75W
MODIFICATION

NOT PART OF
S75W
MODIFICATION

STUDY AREA

NOT PART OF
S75W
MODIFICATION

STUDY AREA

LDSW1
LDSW2
LDSW3
LDSW4

LDLW1
LDLW2
LDLW3
LDLW4
LDLW5

NOT PART OF
S75W
MODIFICATION

Grid to MGA co-ordinates

DEPTH OF COVER CONTOURS ARE IN METRES

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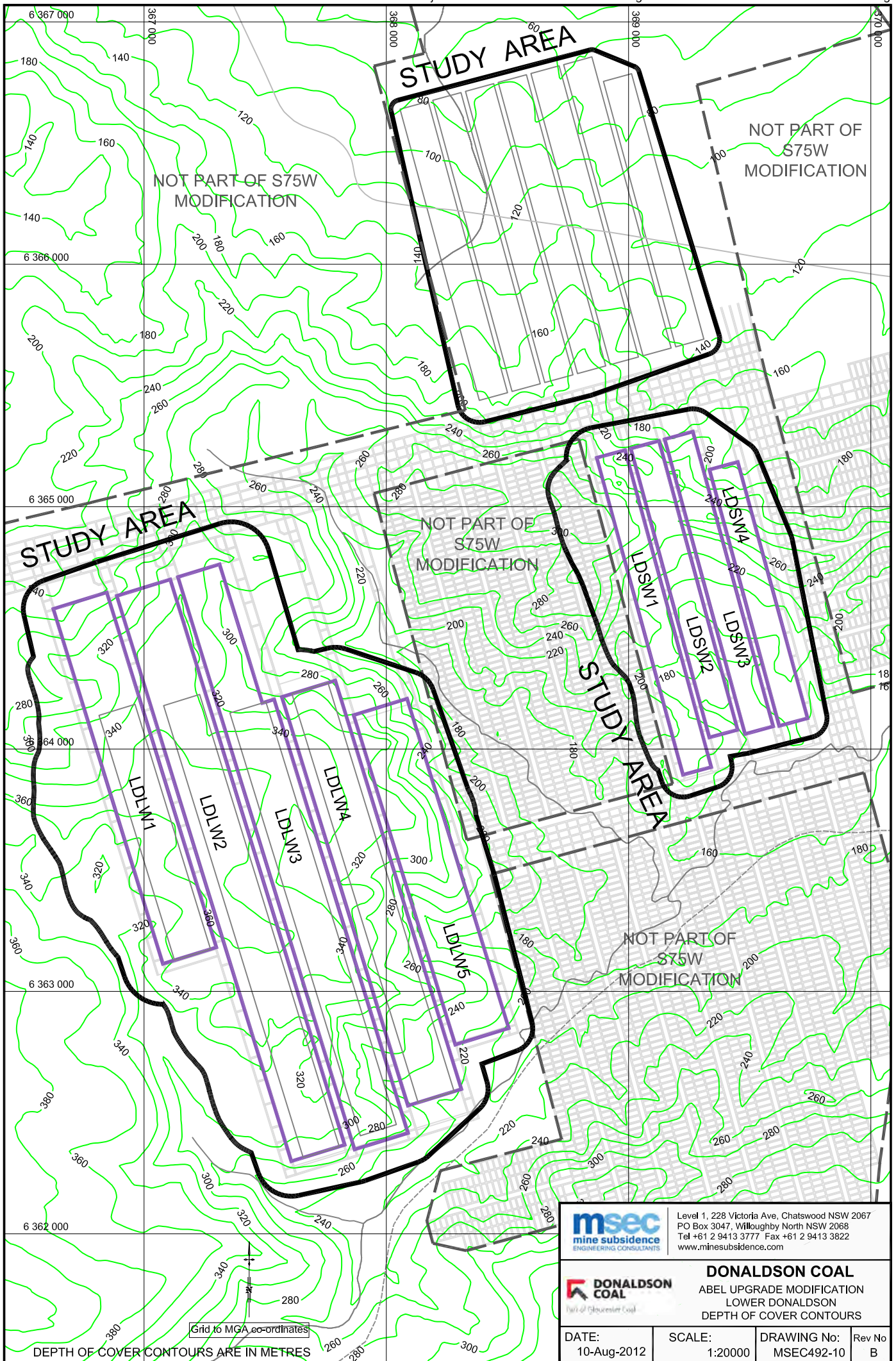370 000

msec
mine subsidence
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COAL
Part of Gloucester Coal

DONALDSON COAL
ABEL UPGRADE MODIFICATION
LOWER DONALDSON
DEPTH OF COVER CONTOURS

| DATE:
10-Aug-2012 | SCALE:
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B |

SEAM FLOOR CONTOURS ARE IN METRES (AHD)

STUDY AREA

NOT PART OF
S75W
MODIFICATION

NOT PART OF S75W
MODIFICATION

STUDY AREA

STUDY AREA

NOT PART OF
S75W
MODIFICATION

NOT PART OF
S75W
MODIFICATION

Grid to MGA co-ordinates

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DONALDSON COAL
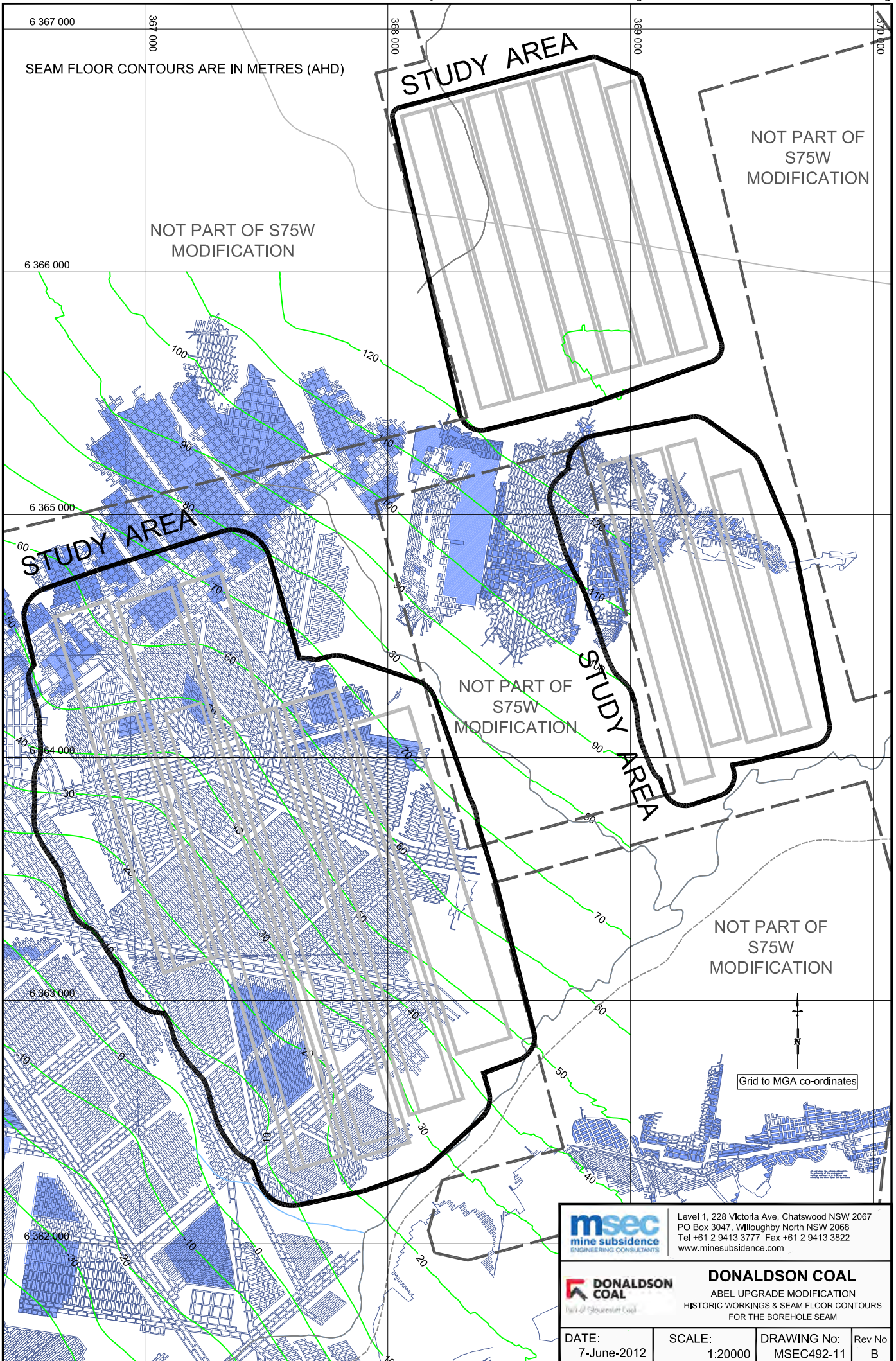
msec
mine subsidence
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Tel +61 2 9413 3777 Fax +61 2 9413 3822
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DONALDSON COAL
ABEL UPGRADE MODIFICATION
HISTORIC WORKINGS & SEAM FLOOR CONTOURS
FOR THE BOREHOLE SEAM

Part of Gloucester Coal

| DATE:
7-June-2012 | SCALE:
1:20000 | DRAWING No:
MSEC492-11 | Rev No
B |

STUDY AREA

NOT PART OF
S75W
MODIFICATION

NOT PART OF S75W
MODIFICATION

UDSW7
UDSW6
UDSW5
UDSW4
UDSW3
UDSW2
UDSW1

STUDY AREA

NOT PART
OF S75W
MODIFICATION

STUDY AREA

LDSW1
LDSW2
LDSW3
LDSW4

LDLW1
LDLW2
LDLW3

UDBP1
UDBP2
UDBP3
UDBP4

LDLW4
LDLW5

Long Gully

Blue Gum Creek

6 367 000
6 366 000
6 365 000
6 364 000
6 363 000
6 362 000

367 000
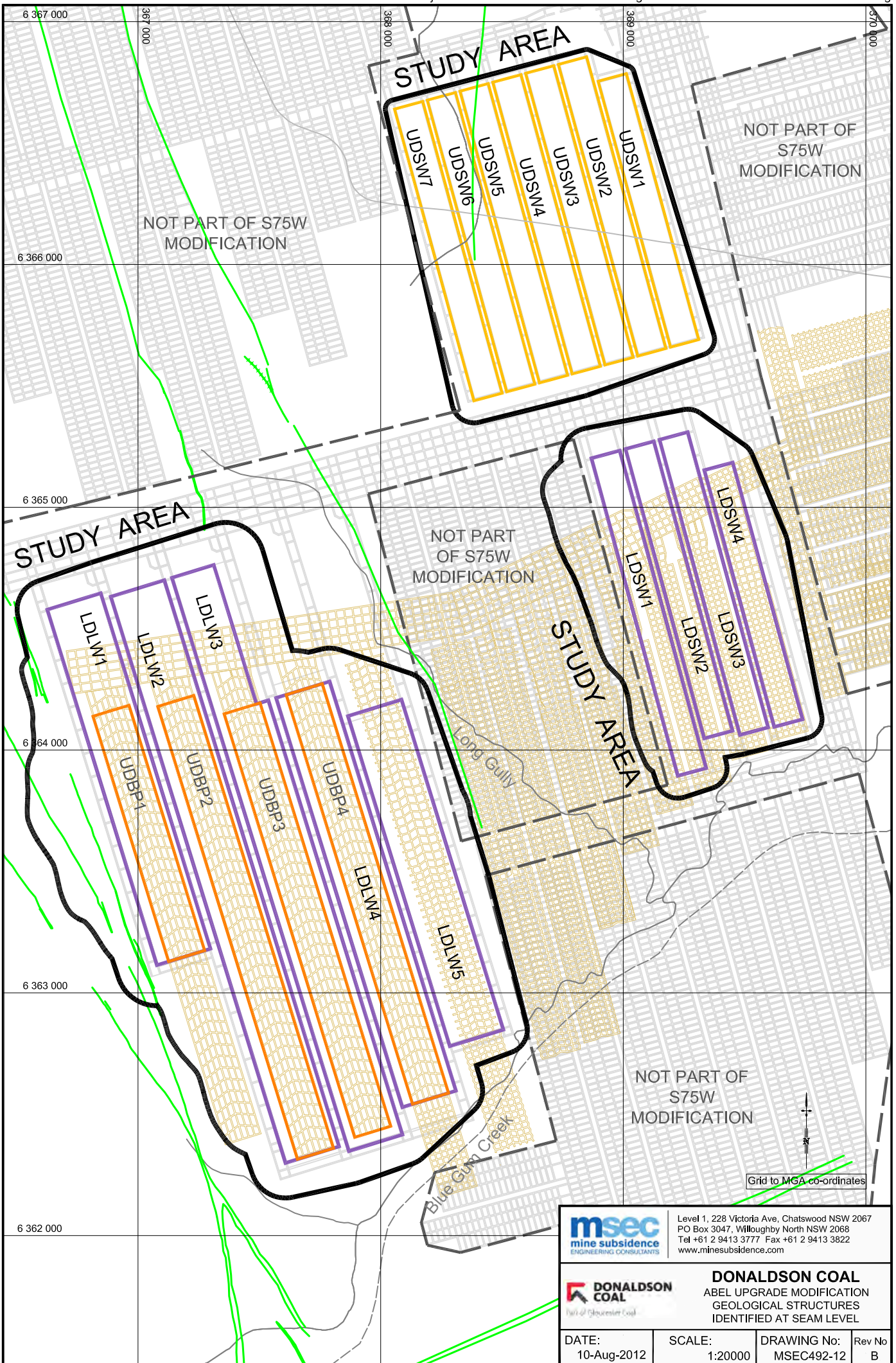368 000
369 000
370 000

Grid to MGA co-ordinates

msec
mine subsidence
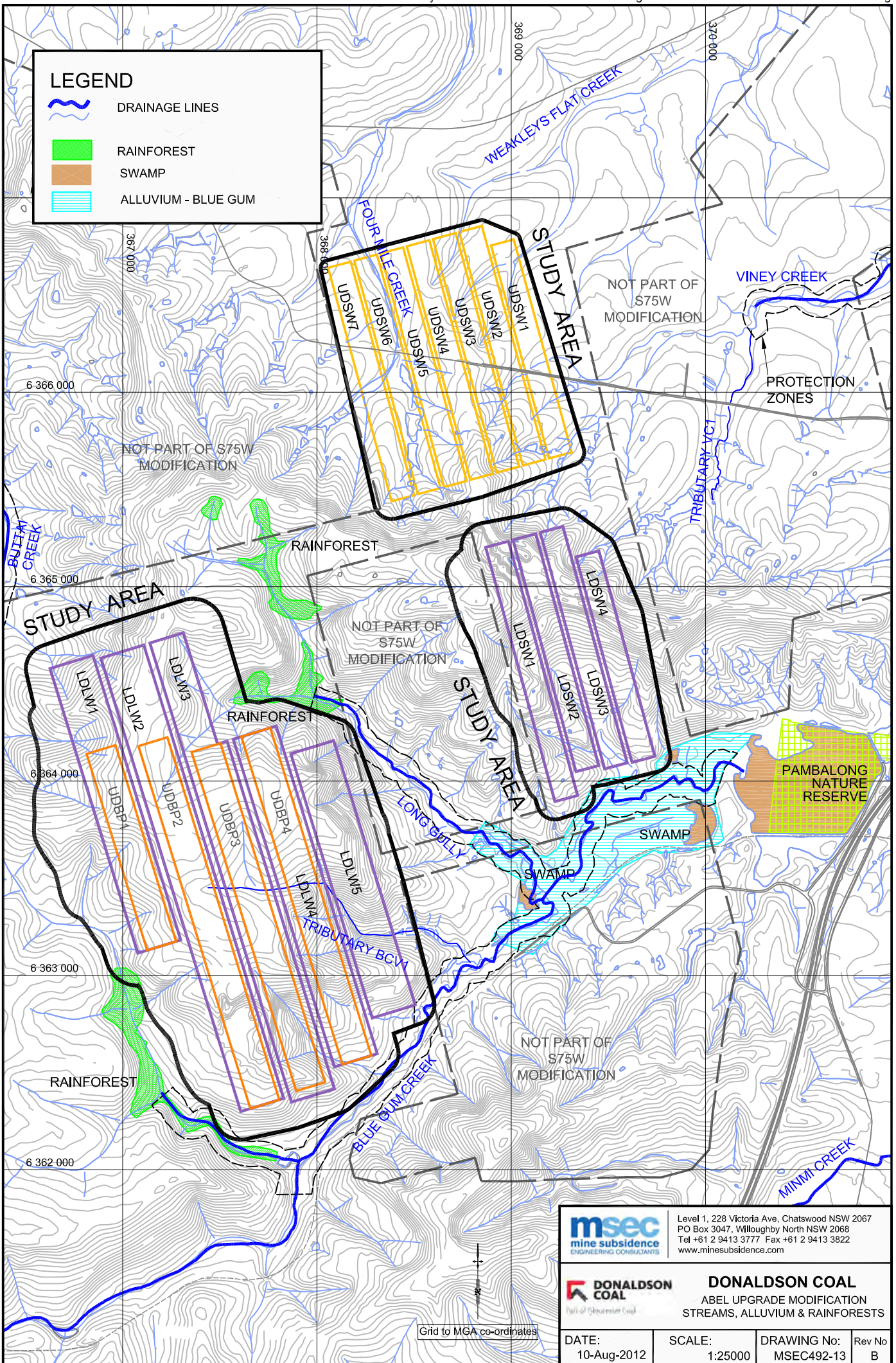ENGINEERING CONSULTANTS

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DONALDSON
COAL
Part of Gloucester Coal

DONALDSON COAL
ABEL UPGRADE MODIFICATION
GEOLOGICAL STRUCTURES
IDENTIFIED AT SEAM LEVEL

| DATE: 10-Aug-2012 | SCALE: 1:20000 | DRAWING No: MSEC492-12 | Rev No B |

LEGEND

DRAINAGE LINES

RAINFOREST

SWAMP

ALLUVIUM - BLUE GUM

369 000

370 000

367 000

368 000

6 366 000

6 365 000

6 364 000

6 363 000

6 362 000

WEAKLEYS FLAT CREEK

STUDY AREA

NOT PART OF S75W MODIFICATION

VINEY CREEK

FOUR MILE CREEK

UDSW7
UDSW6
UDSW5
UDSW4
UDSW3
UDSW2
UDSW1

PROTECTION ZONES

TRIBUTARY VC1

NOT PART OF S75W MODIFICATION

BUTTAI CREEK

RAINFOREST

NOT PART OF S75W MODIFICATION

LDSW4
LDSW1
LDSW2
LDSW3

STUDY AREA

STUDY AREA

LDLW1
LDLW2
LDLW3

RAINFOREST

LONG GULLY

PAMBALONG NATURE RESERVE

UDBP1
UDBP2
UDBP3
UDBP4
LDLW4
LDLW5

SWAMP

SWAMP

TRIBUTARY BCV1

RAINFOREST

BLUE GUM CREEK

NOT PART OF S75W MODIFICATION

MINMI CREEK

Grid to MGA co-ordinates

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DONALDSON COAL
Part of Gloucester Coal

DONALDSON COAL
ABEL UPGRADE MODIFICATION
STREAMS, ALLUVIUM & RAINFORESTS

DATE:	SCALE:	DRAWING No:	Rev No
10-Aug-2012	1:25000	MSEC492-13	B
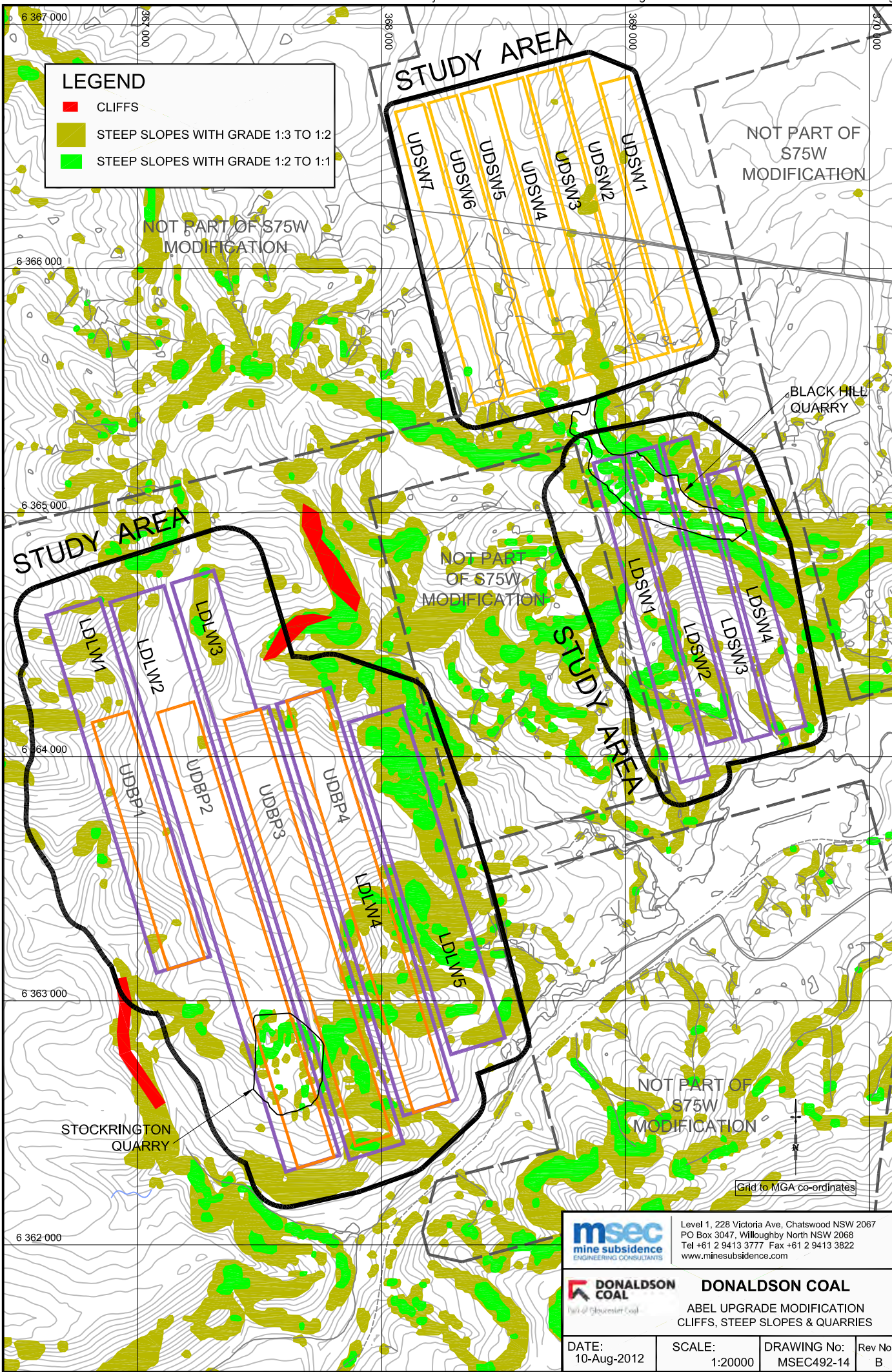
LEGEND

- CLIFFS
- STEEP SLOPES WITH GRADE 1:3 TO 1:2
- STEEP SLOPES WITH GRADE 1:2 TO 1:1

STUDY AREA

NOT PART OF
S75W
MODIFICATION

UDSW7 UDSW6 UDSW5 UDSW4 UDSW3 UDSW2 UDSW1

NOT PART OF S75W
MODIFICATION

6 367 000
6 366 000
6 365 000
6 364 000
6 363 000
6 362 000

367 000
368 000
369 000
370 000

BLACK HILL
QUARRY

STUDY AREA

LDLW1 LDLW2 LDLW3

NOT PART
OF S75W
MODIFICATION

LDSW1 LDSW2 LDSW3 LDSW4

STUDY AREA

UDBP1 UDBP2 UDBP3 UDBP4

LDLW4

LDLW5

STOCKRINGTON
QUARRY

NOT PART OF
S75W
MODIFICATION

Grid to MGA co-ordinates

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mine subsidence
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**DONALDSON
COAL**
Part of Gloucester Coal

DONALDSON COAL

ABEL UPGRADE MODIFICATION
CLIFFS, STEEP SLOPES & QUARRIES

| DATE:
10-Aug-2012 | SCALE:
1:20000 | DRAWING No:
MSEC492-14 | Rev No
B |

LEGEND
- ROADS & TRACKS
- F3 FREEWAY
- PROPOSED EXPRESSWAY
- RAILWAY
- GAS LINE
- WATER INFRASTRUCTURE

STUDY AREA

NOT PART OF S75W MODIFICATION

Viney Creek

WATER PIPELINE

UDSW7 UDSW6 UDSW5 UDSW4 UDSW3 UDSW2 UDSW1

BROWNS RD

NOT PART OF S75W MODIFICATION

MEREDITH RD

BLACK HILL ROAD

TAYLORS RD

LDSW4

LDSW1 LDSW2 LDSW3

MEREDITH RD

NOT PART OF S75W MODIFICATION

STUDY AREA

Buttai Creek

STUDY AREA

LDLW1 LDLW2 LDLW3

Long Gully

JACOBS LA

CEDAR HILL DR

UDBP1 UDBP2 UDBP3 UDBP4

LDLW4

LDLW5

DOG HOLE RD

BLUE GUM

DISUSED RAILWAY CORRIDOR

DOG HOLE RD

STOCKRINGTON RD

SEAHAMPTON RD

FREEWAY OVERPASS

WATER PIPELINE

NOT PART OF S75W MODIFICATION

Blue Gum Creek

SYDNEY NEWCASTLE FREEWAY

Minmi Creek

LENAGHANS

RICHMOND VALE No1 TUNNEL

Jemena

FREEWAY OVERPASS

WOODFORD

BRIDGE

BRIDGE

HUNTER EXPRESSWAY (UNDER CONSTRUCTION)

N

Grid to MGA co-ordinates

msec
mine subsidence
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DONALDSON COAL

DONALDSON COAL
Part of Gloucester Coal

ABEL UPGRADE MODIFICATION
ROADS, TRACKS,
WATER & GAS INFRASTRUCTURE

| DATE: 10-Aug-2012 | SCALE: 1:25000 | DRAWING No: MSEC492-15 | Rev No B |

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DONALDSON COAL
ABEL UPGRADE MODIFICATION
ELECTRICAL INFRASTRUCTURE

DATE: 10-Aug-2012	SCALE: 1:20000	DRAWING No: MSEC492-16	Rev No B

STUDY AREA

NOT PART OF S75W MODIFICATION

NOT PART OF S75W MODIFICATION

STUDY AREA

NOT PART OF S75W MODIFICATION

STUDY AREA

NOT PART OF S75W MODIFICATION

UDSW7 UDSW6 UDSW5 UDSW4 UDSW3 UDSW2 UDSW1

LDLW1 LDLW2 LDLW3

UDBP1 UDBP2 UDBP3 UDBP4

LDLW4 LDLW5

LDSW1 LDSW2 LDSW3 LDSW4

330kV POWERLINE

Grid to MGA co-ordinates

LEGEND
— 330kV TRANSMISSION LINES
— 132kV POWERLINES
— LOW VOLTAGE POWERLINES
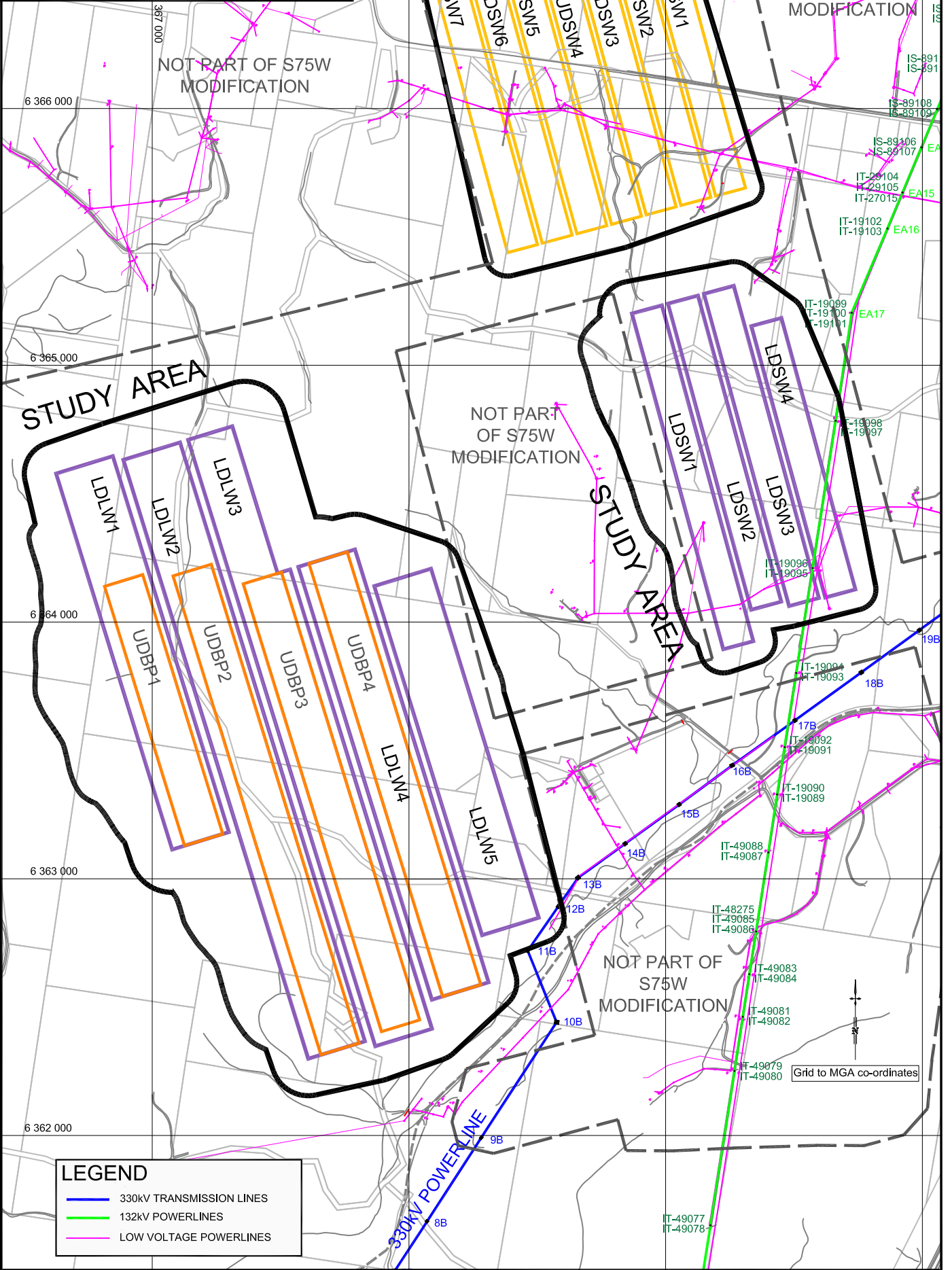
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mine subsidence
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DONALDSON COAL
ABEL UPGRADE MODIFICATION
TELECOMMUNICATIONS
INFRASTRUCTURE

DONALDSON COAL
Part of Gloucester Coal

DATE:	SCALE:	DRAWING No:	Rev No
10-Aug-2012	1:20000	MSEC492-17	B

STUDY AREA

NOT PART OF
S75W
MODIFICATION

NOT PART OF S75W
MODIFICATION

TELSTRA
OPTICAL FIBRE
CABLE

UDSW7
UDSW6
UDSW5
UDSW4
UDSW3
UDSW2
UDSW1

STUDY AREA

LDSW4
LDSW1
LDSW3
LDSW2

NOT PART OF
S75W
MODIFICATION

STUDY AREA

LDLW1
LDLW2
LDLW3

UDBP1
UDBP2
UDBP3
UDBP4

LDLW4

LDLW5

EXISTING ALIGNMENT

REALIGNMENT
OF OPTICAL
FIBRE CABLE

NOT PART OF
S75W
MODIFICATION

OPTUS OPTICAL FIBRE CABLE

GSM Tower Installation

LEGEND
COPPER CABLES
OPTICAL FIBRE CABLES
PROPOSED OPTICAL FIBRE ROUTE
GSM TOWER INSTALLATION

Grid to MGA co-ordinates

368 000
369 000
370 000

6 366 000
6 365 000
6 364 000
6 363 000
6 362 000

367 000

STUDY AREA

NOT PART
OF S75W
MODIFICATION

NOT PART
OF S75W
MODIFICATION

UDSW7 UDSW6 UDSW5 UDSW4 UDSW3 UDSW2 UDSW1

LDSW1 LDSW2 LDSW3 LDSW4

STUDY AREA

NOT PART OF
S75W
MODIFICATION

STUDY AREA

LDLW1 LDLW2 LDLW3

UDBP1 UDBP2 UDBP3 UDBP4

LDLW5

LDLW4

SUBSIDENCE CONTROL ZONE

SUBSIDENCE CONTROL ZONE

SUBSIDENCE CONTROL ZONE

NOT PART
OF S75W
MODIFICATION

6 367 000
6 366 000
6 365 000
6 364 000
6 363 000
6 362 000

367 000
368 000
369 000
370 000

N

Grid to MGA co-ordinates

LEGEND
- HOUSES (PRINCIPAL RESIDENCE)
- SUBSIDENCE CONTROL ZONE AROUND PRINCIPAL RESIDENCE
- RURAL STRUCTURES
- FARM DAMS

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mine subsidence
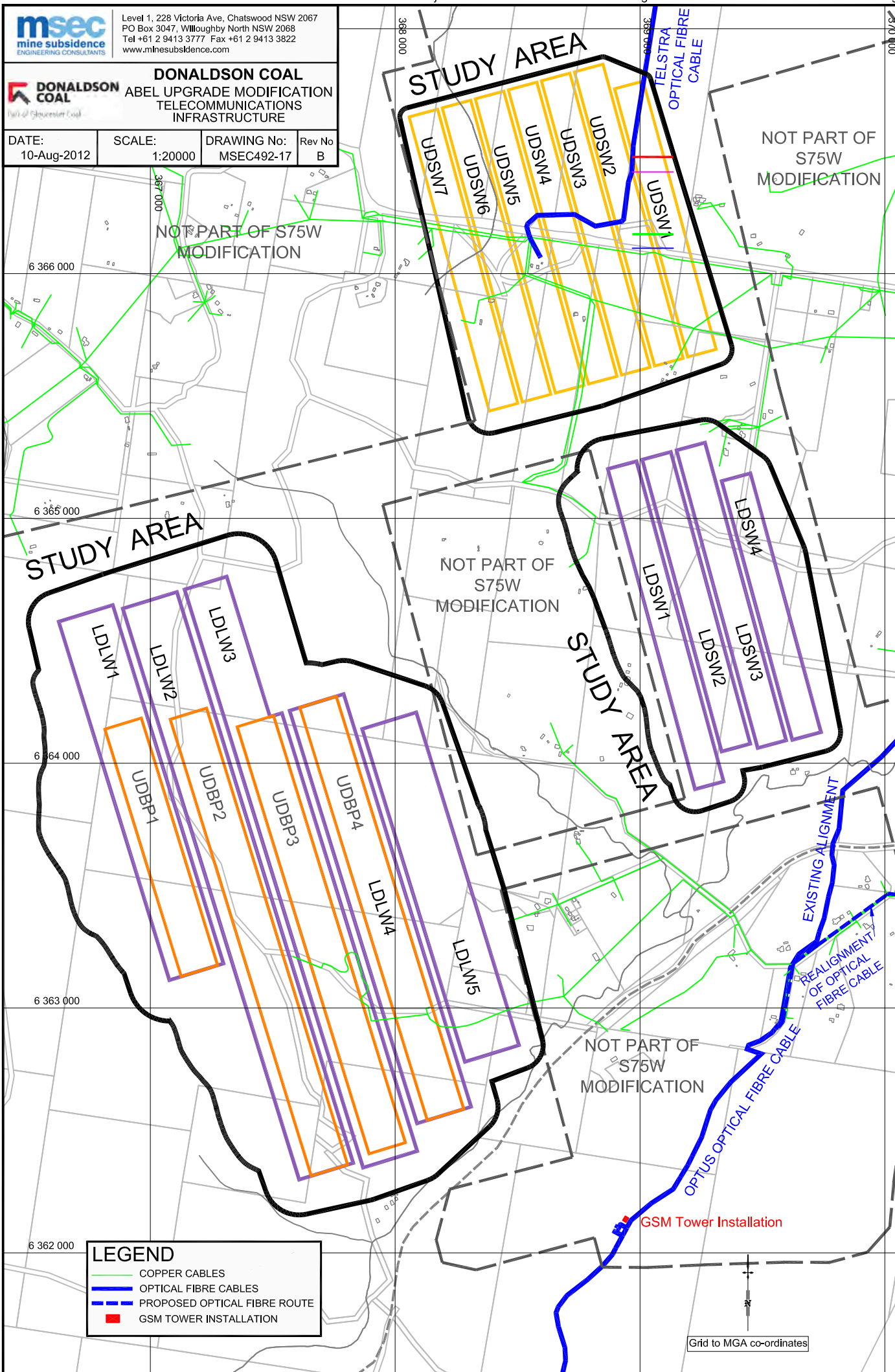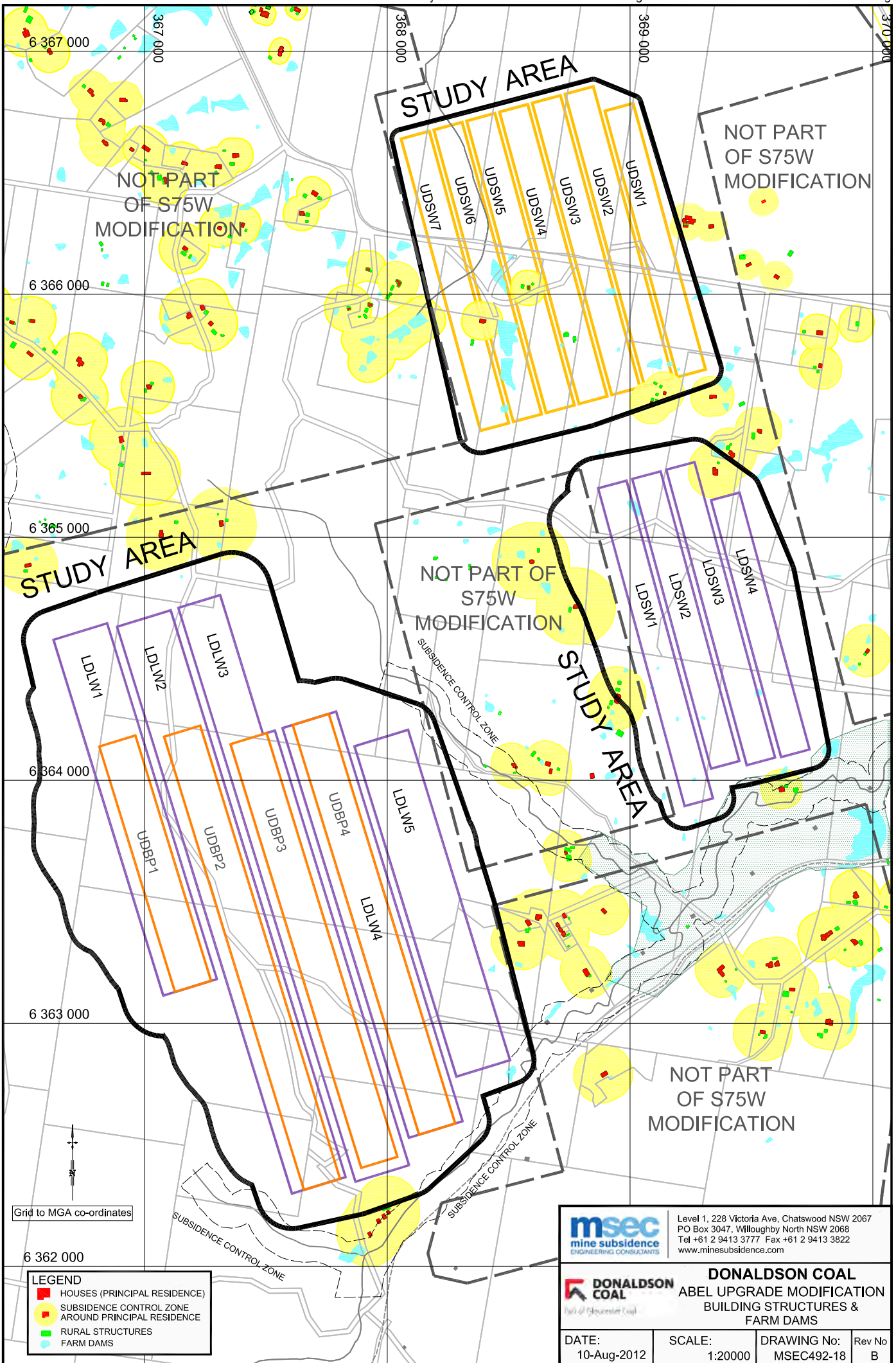ENGINEERING CONSULTANTS

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DONALDSON COAL
ABEL UPGRADE MODIFICATION
BUILDING STRUCTURES &
FARM DAMS

| DATE: 10-Aug-2012 | SCALE: 1:20000 | DRAWING No: MSEC492-18 | Rev No B |
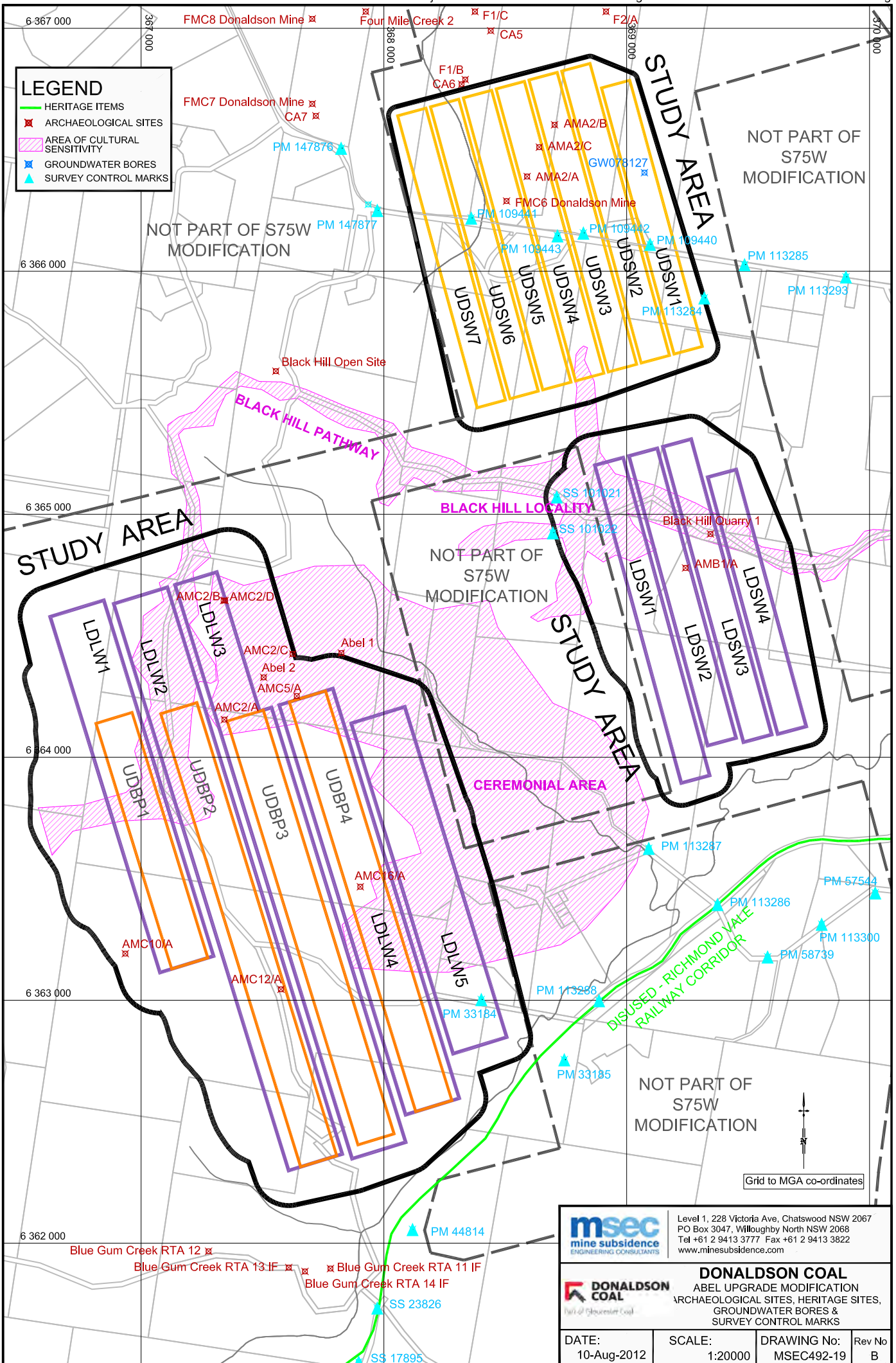
LEGEND
- HERITAGE ITEMS
- ARCHAEOLOGICAL SITES
- AREA OF CULTURAL SENSITIVITY
- GROUNDWATER BORES
- SURVEY CONTROL MARKS

STUDY AREA

NOT PART OF S75W MODIFICATION

NOT PART OF S75W MODIFICATION

STUDY AREA

NOT PART OF S75W MODIFICATION

NOT PART OF S75W MODIFICATION

STUDY AREA

BLACK HILL PATHWAY

BLACK HILL LOCALITY

CEREMONIAL AREA

DISUSED - RICHMOND VALE RAILWAY CORRIDOR

Grid to MGA co-ordinates

FMC8 Donaldson Mine
Four Mile Creek 2
F1/C
F2/A
CA5
F1/B
CA6
FMC7 Donaldson Mine
CA7
PM 147876
AMA2/B
AMA2/C
GW078127
AMA2/A
PM 147877
PM 109441
FMC6 Donaldson Mine
PM 109442
PM 109440
PM 109443
PM 113285
PM 113293
PM 113284
UDSW7
UDSW6
UDSW5
UDSW4
UDSW3
UDSW2
UDSW1
Black Hill Open Site
SS 101021
SS 101022
Black Hill Quarry 1
AMB1/A
LDSW1
LDSW2
LDSW3
LDSW4
AMC2/B
AMC2/D
LDLW3
AMC2/C
Abel 1
LDLW1
LDLW2
Abel 2
AMC5/A
AMC2/A
UDBP1
UDBP2
UDBP3
UDBP4
AMC16/A
PM 113287
PM 57544
PM 113286
PM 113300
PM 58739
AMC10/A
LDLW4
LDLW5
AMC12/A
PM 113288
PM 33184
PM 33185
PM 44814
Blue Gum Creek RTA 12
Blue Gum Creek RTA 13 IF
Blue Gum Creek RTA 11 IF
Blue Gum Creek RTA 14 IF
SS 23826
SS 17895

6 367 000
367 000
368 000
369 000
370 000
6 366 000
6 365 000
6 364 000
6 363 000
6 362 000

DONALDSON COAL
ABEL UPGRADE MODIFICATION
ARCHAEOLOGICAL SITES, HERITAGE SITES,
GROUNDWATER BORES &
SURVEY CONTROL MARKS

DONALDSON COAL
Part of Gloucester Coal

DATE:	SCALE:	DRAWING No:	Rev No
10-Aug-2012	1:20000	MSEC492-19	B
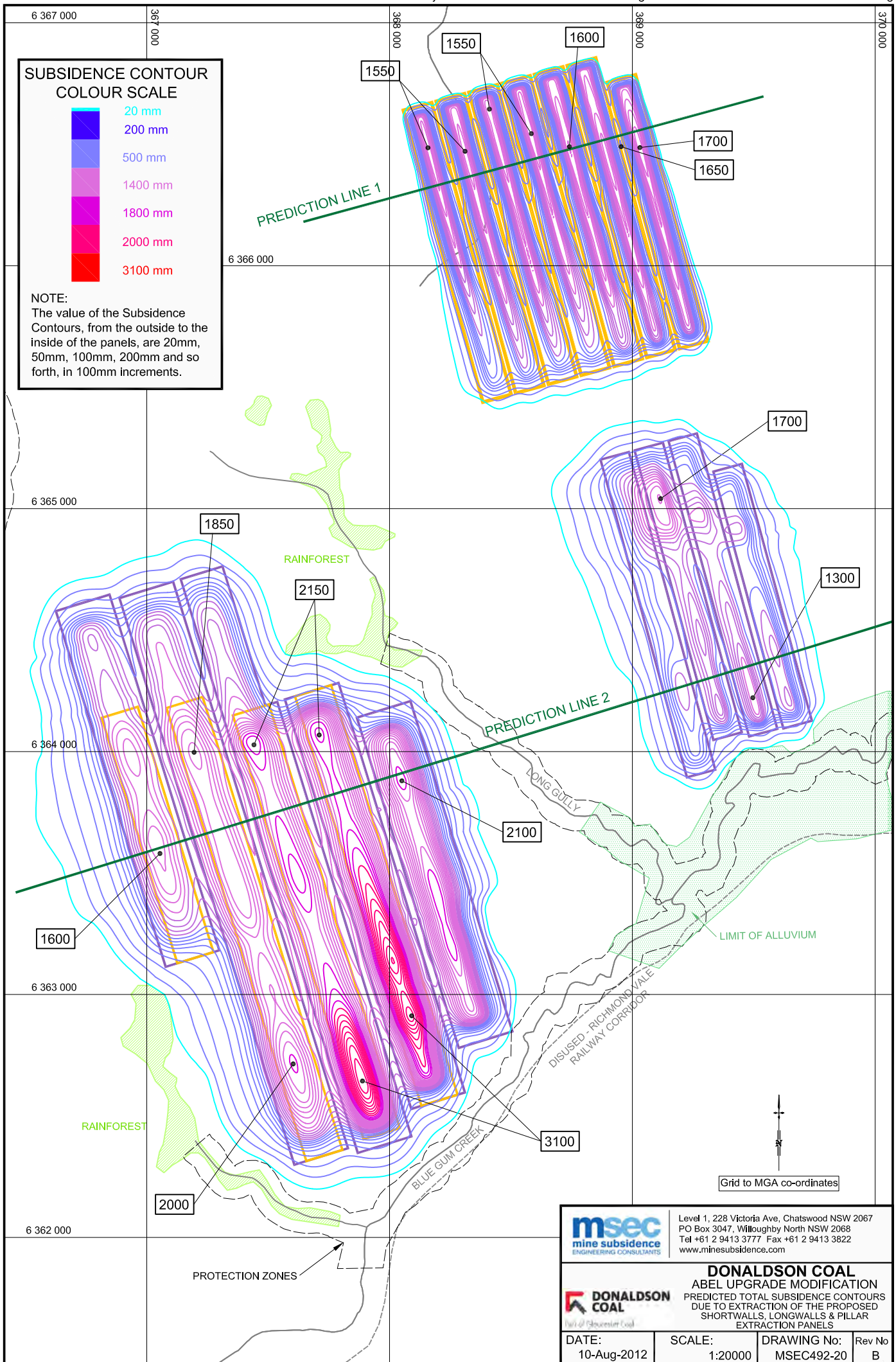
SUBSIDENCE CONTOUR
COLOUR SCALE

	20 mm
	200 mm
	500 mm
	1400 mm
	1800 mm
	2000 mm
	3100 mm

NOTE:
The value of the Subsidence Contours, from the outside to the inside of the panels, are 20mm, 50mm, 100mm, 200mm and so forth, in 100mm increments.

PREDICTION LINE 1

PREDICTION LINE 2

1550
1600
1550
1700
1650
1700
1300
1850
2150
2100
1600
2000
3100

RAINFOREST
RAINFOREST

LONG GULLY
LIMIT OF ALLUVIUM
DISUSED - RICHMOND VALE RAILWAY CORRIDOR
BLUE GUM CREEK
PROTECTION ZONES

Grid to MGA co-ordinates

6 367 000
6 366 000
6 365 000
6 364 000
6 363 000
6 362 000

367 000
368 000
369 000
370 000

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DONALDSON COAL
ABEL UPGRADE MODIFICATION
PREDICTED TOTAL SUBSIDENCE CONTOURS
DUE TO EXTRACTION OF THE PROPOSED
SHORTWALLS, LONGWALLS & PILLAR
EXTRACTION PANELS

DONALDSON COAL
Part of Gloucester Coal

DATE:	SCALE:	DRAWING No:	Rev No
10-Aug-2012	1:20000	MSEC492-20	B